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# ***The License-Exempt Wireless Broadband Market FCC Briefing***

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## Some Facts About Alvarion

- The worldwide leader in Wireless Broadband with the largest global market share
- Over 800 U.S. operators
- Market product from bands ranging from 800MHz to 28GHz
- More than 1,500,000 units installed in over 125 countries
- Major global OEMs include Siemens, Alcatel, Nera & Datang
- Company annual sales over \$100 million
- 650 employees (over 250 R&D engineers)
- Active before the FCC in several license-exempt proceedings



# The Value of License-Exempt Wireless Broadband Service

- Broadband is an economic development issue. Unlike “hotspots,” whose value is to the operator, user, and/or retail storefront provider, LE wireless broadband has a value chain that includes the operator and the total community of homes, businesses, schools, etc. within the cell footprint.
- *LE wireless broadband is becoming the vehicle of choice for local civic and business leaders to seize control of their own community’s broadband destiny, instead of merely hoping and waiting for an outsider to provide for them.*
- Many license-exempt broadband providers (WISPs) were created to fill the void left by incumbent wireline technologies. The net result is that many consumers, educators, hospitals and local governments no longer have to rely on the cable modem/DSL “duopoly” for broadband service.



## Key Events in 2002

- The license-exempt industry experiences accelerated growth throughout the country.
- *Additional license-exempt vendors enter the license-exempt wireless broadband market, further validating the application.*
- 802.11b falls from favor as a BWA method as market begins to professionalize and operators seek equipment designed for the application.
- *First generation PMP 5 GHz systems emerge.*
- FCC discovers license-exempt operators and creates new opportunities for additional spectrum and other rule changes to promote license-exempt broadband deployment.



# Who Is Now Adopting & Deploying the Application

- Private ISPs (began in late 1998)
- Broadband CLECs (began in 1999)
- Telcos (began in late 2000)
- Rural Cellular Companies (began in mid 2001)
- Utilities (began in late 2001)
- Cable Companies (last to adopt, unless they are also telco, etc.)



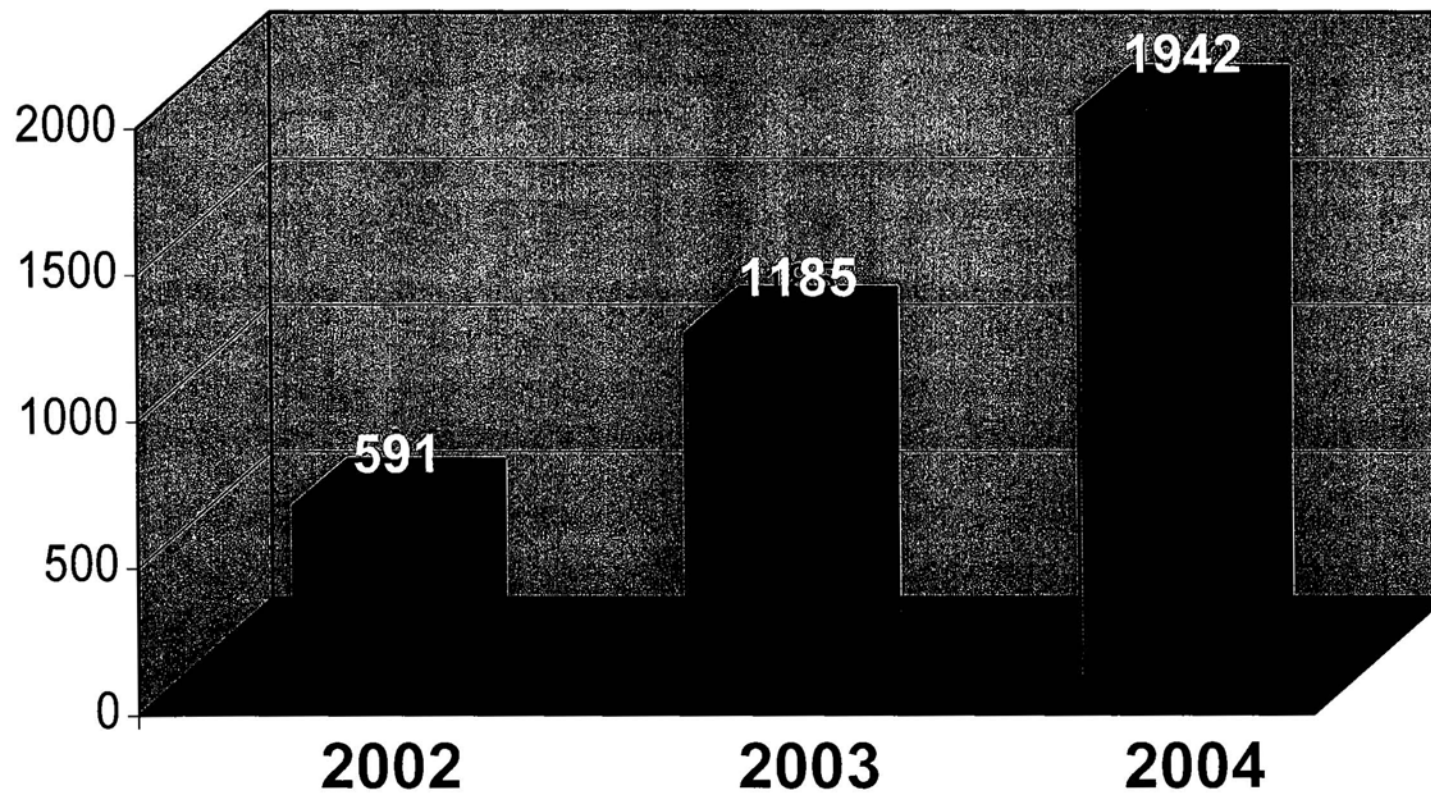
## Key Statistics



- In a report published January 16, 2003, Cahners In-Stat estimates there are between 1,500 and 1,800 providers of license-exempt wireless broadband service.
- *Cahners further estimates that nearly 600,000 subscribers are now receiving license-exempt broadband service; subscribership is expected to double by the end of 2003.*
- According to a recent LEA survey, investments in WISPs during 2002 exceeded \$445 million in the U.S. alone.
- *License-exempt wireless broadband is now available in over 3,000 towns in the U.S. (Alvarion estimate), with the largest mass in Midwest and South Central regions, where line-of-sight is more easily achieved and smaller tier markets are highly concentrated.*

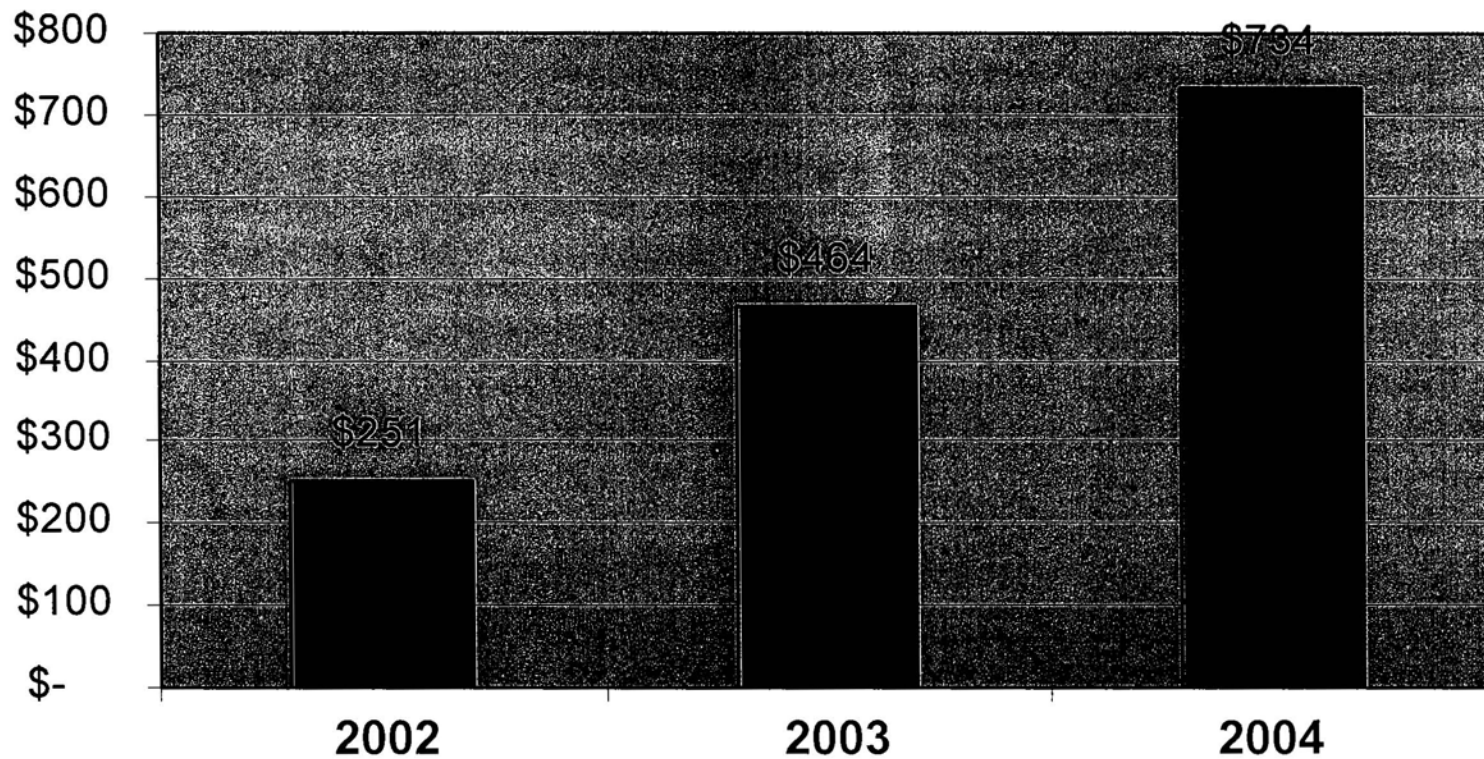


## Unlicensed Subscriber Growth





## Estimated Subscriber Revenue (in millions)





## Some Examples:

*A WISP – AMA Tectel (a.k.a. AMA Online),  
Texas <http://amaonline.com/>*

A subsidiary of one of America's largest grain producers, AMA services over 4,000 wireless broadband subscribers covering thousands of square miles and dozens of small towns in and around the greater Amarillo area.

AMA is the largest wireless broadband carrier in a single market in the U.S.A., including all licensed and unlicensed band operators.





## Some Examples (cont'd):

*A Utility – Wheatland Electric, Kansas <http://www.wbsnet.org/>*

As the local cooperative electric utility provider, Wheatland provides power to the 40,000 business, schools and residences of an 11 county ultra rural area western Kansas. Though relatively new, their Wheatland Broadband subsidiary now has approximately 1,100 buildings online in only the first initial phases of deployment. This in an area where town population is often measured in hundreds and in view that broadband “take rates” are still fairly low nationwide. Customers as far as 18 miles away from a base station are can be serviced.



***Wheatland Electric Cooperative, Inc.***

Your Touchstone Energy® Cooperative

*The power of human connections*





## Some Examples (cont'd) :


*A Rural Cellular Company –  
Midwest Wireless, Minnesota  
<http://midwestwireless.com>*

Based in Mankato, MN, Midwest is a U.S. top 20 cellular carrier with over 300,000 cellular subscribers. Midwest Wireless provides their “ClearWave” wireless broadband services to over 1,300 subscribers in over 120 townships throughout rural Minnesota and Iowa to towns as small as a 236 population.

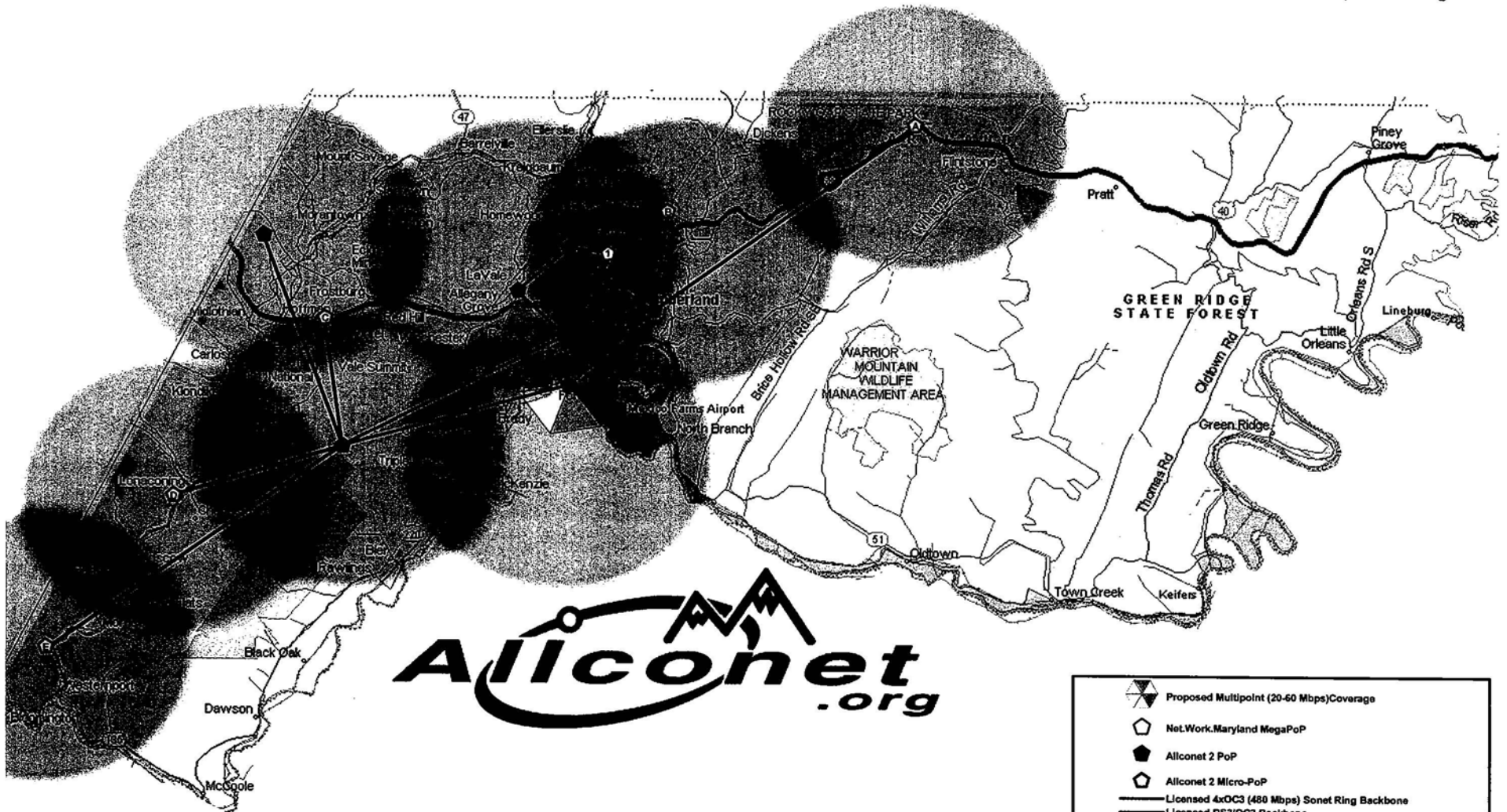


*Allegany County, Maryland's Allconet*  
*(<http://prime.allconet.org/allconet2/>)*

By their own definition, Allconet operates in the “economically depressed rural area in the foothills of the Appalachian Mountains.” Allconet is the most sophisticated municipally owned unlicensed wireless broadband system in North America, with every single government and non-profit connected via unlicensed wireless, including every school, every library, every public office, every police station house, city hall, etc. -- over 90 buildings in total. Allegany County does not have a single leased line, saving the community many, many thousands of dollars each month. This is a carrier-class network, with better than 99.99% statistical and historical uptime. A fully redundant ring supports the Allconet system, which is also wireless. The success has been such that the county has voted to become their own carrier so they may offer affordable unlicensed wireless broadband to the residents of the county. With the help of state grant monies above their own county funding, the system is growing in 2003 “to provide access to the Internet to approximately 85% of the residents and 95% of the businesses and 100% of the government and industrial parks in Allegany County.”



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## A successful mobile example:

### San Diego County Sheriff's Department – 450+ Vehicles

Deployed Alvarion's mobile unlicensed systems to connect officers to critical data like mug shots, route maps, finger print data, and other bandwidth intensive applications. As well, the systems allow departmental staff to update remote computers with software like virus file updates while mobile. Sgt. Muenzer, the administrator of the San Diego deployment, says their system is adding two (2) hours of productivity *per day* to every officer with a connected vehicle.



